



MI FluFocus

Influenza Surveillance and Avian Influenza Update

Bureau of Epidemiology
Bureau of Laboratories



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New updates in this issue:

- **Michigan Surveillance:** MDCH is reporting 2 confirmed cases of Influenza A (H1N1) virus. Ongoing investigations are occurring throughout the state (see Notice below).
 - **National Surveillance:** 141 confirmed human infections with Influenza A (H1N1), including 1 death have been reported as of May 1, 2009.
 - **International Surveillance:** 11 countries have officially reported 331 confirmed cases of influenza A(H1N1) infection
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*** Notice ***Influenza A (H1N1) virus (Swine origin Flu) Investigation***Please Read***

As of May 1, 2009, 11:00am, the Centers for Disease Control and Prevention (CDC) is reporting 141 confirmed human infections, including one death from an influenza A (H1N1) virus (previously called swine-origin influenza A(H1N1)) in the United States. This number is expected to rise as the outbreak evolves. The cases occurred in Arizona (4) California (13), Colorado (2), Delaware (4), Illinois (3), Indiana (3), Kansas (2), Kentucky (1), Massachusetts (2), Michigan (2), Minnesota (1), Nebraska (1), Nevada (1), New Jersey (5), New York (50), Ohio (1), South Carolina (16) and Texas (28), and Virginia (2).

Nationally, the situation continues to evolve rapidly. According to the World Health Organization (WHO), as of 06:00 GMT, 1 May 2009, 11 countries have officially reported 331 cases of influenza A (H1N1) infection. In addition to the 109 cases in the United States, Mexico has reported 156 confirmed human cases of infection, including nine deaths. The following countries have reported laboratory confirmed cases with no deaths - Austria (1), Canada (34), Germany (3), Israel (2), Netherlands (1), New Zealand (3), Spain (13), Switzerland (1) and the United Kingdom (8).

Clinicians should consider the possibility of H1N1 influenza virus infections in patients presenting with febrile respiratory illness. If H1N1 flu is suspected, clinicians should obtain a respiratory swab for H1N1 influenza testing and place it in a refrigerator (not a freezer). Once collected, the clinician should contact their local health department. The following case definitions have been created by the CDC:

A **confirmed case** of H1N1 influenza virus infection is defined as a person with an acute febrile respiratory illness with laboratory confirmed H1N1 influenza virus infection at CDC by one or more of the following tests:

1. real-time RT-PCR
2. viral culture

A **probable case** of H1N1 influenza virus infection is defined as a person with an acute febrile respiratory illness who is positive for influenza A, but negative for H1 and H3 by influenza RT-PCR

A **suspected case** of H1N1 influenza virus infection is defined as a person with acute febrile respiratory illness with onset

- within 7 days of close contact with a person who is a confirmed case of H1N1 influenza virus infection, or
- within 7 days of travel to community* either within the United States or internationally where there are one or more confirmed cases of H1N1 influenza virus infection, or
- resides in a community* where there are one or more confirmed cases of H1N1 influenza virus infection.

*The Michigan Department of Community Health ((MDCH) is defining 'community' as the county in which confirmed cases reside. MDCH is monitoring this situation and evaluating influenza surveillance systems. Additional updates will be provided as they become available. Due to the information being constantly updated, not all of the pertinent information has been included in this document. For the latest information about this rapidly evolving situation, please visit the CDC Influenza A (H1N1) website at <http://www.cdc.gov/H1N1flu>. Michigan-specific information can be found at www.michigan.gov/swineflu. Please distribute this information as needed.

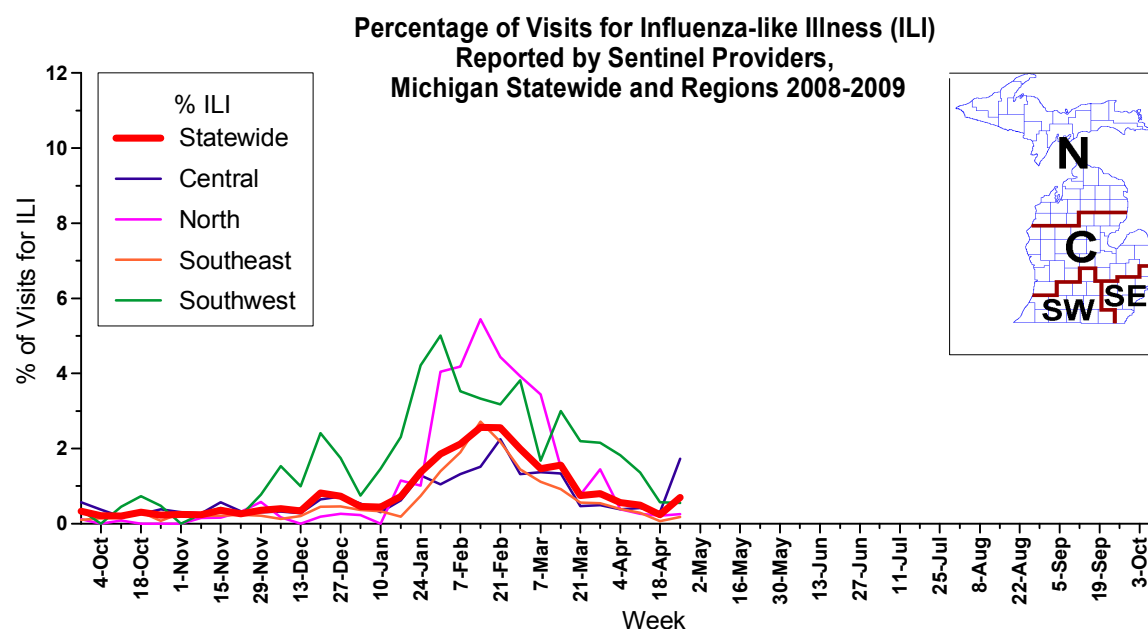
Michigan Disease Surveillance System: The week ending April 25 saw aggregate flu-like numbers hold steady near last week's numbers, while individual case reports decreased slightly. Individual influenza numbers are comparable to numbers seen this time last year, while aggregate numbers are slightly lower.

Regarding novel influenza, the week ending April 25 also saw one report entered; this case was ruled out by MDCH testing. As of May 1, 2009 at 2pm, Michigan has seen 2 confirmed cases.

Emergency Department Surveillance: During the week ending April 25, emergency department visits from both constitutional and respiratory complaints decreased slightly from the previous week. These numbers are comparable to numbers seen at this time last year. Three constitutional alerts in the C(3) Influenza Surveillance Region and five respiratory alerts in the C(4) and SE(1) Influenza Surveillance Regions was generated last week.

Over-the-Counter Product Surveillance: Overall, OTC product sales were steady or down during the week ending April 25. Thermometer sales saw a slight mid-week spike in sales, chest rubs saw a slight decline and the remaining indicators all held near last week's levels. Indicator levels are comparable to those seen at this time last year, except for thermometers, which is slightly lower, and children's electrolytes, which is slightly higher.

Sentinel Provider Surveillance (as of April 23): During the week ending April 25, 2009, 0.7% of all office visits reported by Michigan influenza sentinel sites were due to influenza-like illness (ILI); this is a slight increase from the previous week. This represents 37 patient visits due to ILI reported out of 5,306 office visits; 26 sentinel sites provided data for this report. Activity increased in three of the surveillance regions: Central (1.7%), North (0.3%) and Southeast (0.2%). Activity remained the same in the Southwest (0.6%) region. The increase in the Central region can be attributed to one sentinel site seeing an increase in the number of ILI patient visits, from 1.3% to 9.6%. Note that these rates may change as additional reports are received.



As part of pandemic influenza preparedness, CDC and MDCH highly encourage year-round participation from all sentinel providers. New practices are encouraged to join the sentinel surveillance program today! Contact Cristi Carlton at 517-335-9104 or CarltonC2@michigan.gov for more information.

Laboratory Surveillance (as of April 23): During the past week, 2 new influenza B isolates were identified at the MDCH Bureau of Laboratories (BOL). For the 2008-2009 influenza season, MDCH BOL has identified 284 influenza isolates (followed by Influenza Surveillance Regions of origin):

- 162 A/H1N1 (55SE, 35SW, 23C, 49N)
- 3 A/H3N2 (1SE, 1C, 1N)
- 118 B (24SE, 44SW, 13C, 36N)
 - 9 B/Florida/4/2006-like (4SE, 1SW, 1C, 3N)
 - 108 B/Malaysia/2506/2004-like (20SE, 43SW, 12C, 33N)
 - 1 untypable (SW)

For the week ending April 25, 2009, 10 sentinel laboratories reported. 6 labs reported no positive influenza A results (SE, SW, C, N) and 4 labs reported sporadic influenza A results (SE, SW, N). 6 labs reported no positive influenza B results (SE, SW, C, N) and 4 labs reported sporadic influenza B results (SE, SW). The number of tests performed was decreasing as would be expected with seasonal influenza. These numbers are consistent with seasonal influenza, but may be expected to rise as testing for the swine-origin influenza A (H1N1) virus begins.

Michigan Seasonal Influenza Antigenic Characterization (as of April 23): At this time, 24 influenza seasonal A/H1N1 isolates have been antigenically characterized by the CDC; results indicate all seasonal isolates are A/Brisbane/59/2007-like, which matches the influenza A/H1N1 component of this season's Northern Hemisphere vaccine. One influenza A/H3N2 has been characterized as A/Brisbane/10/2007-like, which matches the A/H3N2 component of this season's vaccine.

At this time, 3 influenza B isolates have been antigenically characterized by the CDC. One influenza B isolate has been characterized as B/Florida/4/2006-like, which matches the influenza B component of this season's vaccine. Two influenza B isolates have been characterized as B/Brisbane/60/2008-like, which does not match this season's vaccine, but is a recommended component of the 2009-2010 vaccine.

Michigan Seasonal Influenza Antiviral Resistance Data (as of April 23): 24 influenza seasonal A/H1N1 viruses from the MDCH Bureau of Laboratories have been tested for antiviral resistance at CDC for the 2008-2009 season. All 24 viruses were resistant to oseltamivir (Tamiflu®) and sensitive to zanamivir, amantadine and rimantadine. These viruses were collected in the SE(11), SW(12) and N(1) Influenza Surveillance Regions. One influenza A/H3N2, collected in the C Region, has been tested for antiviral resistance; that virus was resistant to the adamantanes (amantadine and rimantadine) and sensitive to oseltamivir and zanamivir. Two influenza B isolates, collected in the SW Region, have been tested for antiviral resistance; these viruses were sensitive to oseltamivir and zanamivir (the adamantanes are not effective against B viruses).

Antiviral resistance testing often takes several weeks to complete, and thus cannot be used to guide treatment of individual patients. However, CDC has made interim recommendations regarding the use of antiviral medications for the treatment of influenza and for prophylaxis. This guidance is available at <http://www2a.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00279>.

For information about antiviral susceptibility for swine-origin influenza A (H1N1), go to <http://www.cdc.gov/h1n1flu/antiviral.htm>.

Seasonal Influenza-Associated Pediatric Mortality (as of April 23): Three influenza-associated pediatric mortalities (1 influenza A (SW), 2 influenza B (SE)) have been reported to MDCH for the 2008-2009 influenza season.

***The CDC has asked all states to collect information on any pediatric death associated with influenza infection. This includes not only any death in a child (<18 years) resulting from a compatible illness confirmed to be influenza by an appropriate diagnostic test, but also any unexplained death with evidence of an infectious process in a child. Please immediately call MDCH to ensure that proper clinical specimens are obtained. View the complete MDCH protocol online at http://www.michigan.gov/documents/mdch/ME_pediatric_influenza_guidance_v2_214270_7.pdf.

Seasonal Influenza Congregate Settings Outbreaks (as of April 23): Three congregate setting outbreaks (1C, 2N) due to influenza (1 influenza A, 1 influenza B, 1 unsubtyped) have been reported to MDCH for the 2008-09 influenza season.

MDCH reported **SPORADIC INFLUENZA ACTIVITY** to the CDC for the week ending April 25, 2009.

For stakeholders interested in additional information regarding influenza vaccination and education, the MDCH publication *Michigan FluBytes* is available online at http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_22779_40563-125027--,00.html. *FluBytes* is published weekly during the influenza season.

End of Seasonal Report

Avian and Novel Influenza Activity

WHO Pandemic Phase: Phase 5 - characterized by human-to-human spread of the virus into at least two countries in one WHO region. While most countries will not be affected at this stage, the declaration of Phase 5 is a strong signal that a pandemic is imminent and that the time to finalize the organization, communication, and implementation of the planned mitigation measures is short.

On April 29, 2009, Dr Margaret Chan, WHO's Director-General raised the current level of influenza pandemic alert from phase 4 to 5 based on assessment of all available information and following several expert consultations. She stated that all countries should immediately activate their pandemic preparedness plans.

Michigan Wild Bird Surveillance (USDA, as of April 23): For the 2008 testing season, 2105 Michigan samples have been taken so far, comprised 327 live birds, 1218 hunter-killed birds, 35 morbidity or mortality samples and 525 environmental samples.

HPAI subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 78,210 birds or environmental samples tested nationwide for the 2008 testing season, which will run from April 1, 2008 - March 31, 2009. For more information, visit the National HPAI Early Detection Data System website at <http://wildlifedisease.nbio.gov/ai/>.

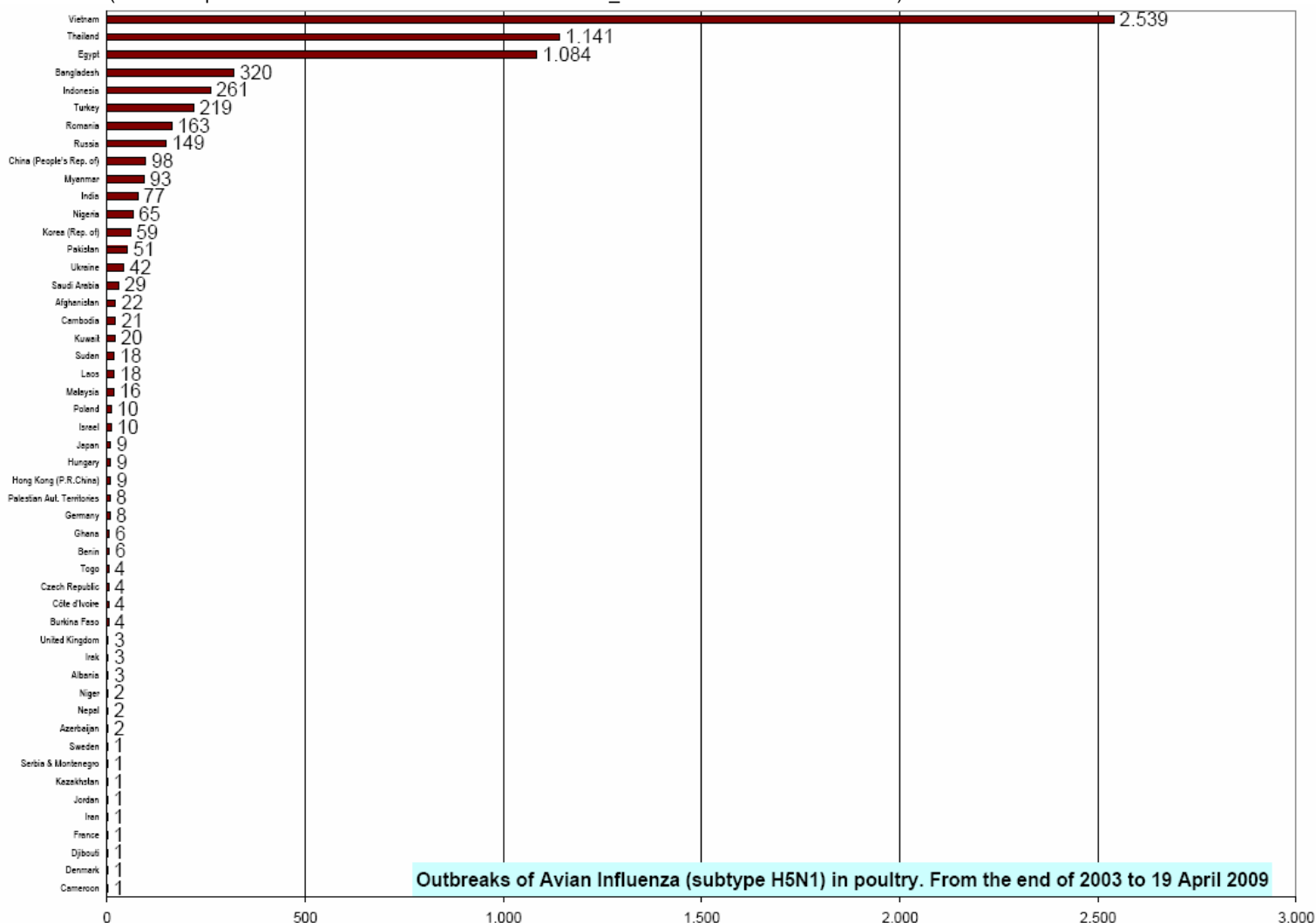
To learn about avian influenza surveillance in Michigan wild birds or to report dead waterfowl, go to Michigan's Emerging Disease website at <http://www.michigan.gov/emergingdiseases>.

Please contact Susan Vagasky at VagaskyS@Michigan.gov with any questions regarding this newsletter or to be added to the weekly electronic mailing list.

Contributors

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Table 1. H5N1 Influenza in Poultry (Outbreaks up to April 19, 2009)(Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 4/21/09)**Table 2. H5N1 Influenza in Humans (Cases up to April 23, 2009)**

(http://www.who.int/csr/disease/avian_influenza/country/cases_table_2009_04_23/en/index.html Downloaded 4/23/2009)

Cumulative number of lab-confirmed human cases reported to WHO. Total number of cases includes deaths.

Country	2003		2004		2005		2006		2007		2008		2009		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	0	0	0	0	0	0	8	5
Bangladesh	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
Cambodia	0	0	0	0	4	4	2	2	1	1	1	0	0	0	8	7
China	1	1	0	0	8	5	13	8	5	3	4	4	7	4	38	25
Djibouti	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Egypt	0	0	0	0	0	0	18	10	25	9	8	4	16	0	67	23
Indonesia	0	0	0	0	20	13	55	45	42	37	24	20	0	0	141	115
Iraq	0	0	0	0	0	0	3	2	0	0	0	0	0	0	3	2
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2	2
Myanmar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Nigeria	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
Pakistan	0	0	0	0	0	0	0	0	3	1	0	0	0	0	3	1
Thailand	0	0	17	12	5	2	3	3	0	0	0	0	0	0	25	17
Turkey	0	0	0	0	0	0	12	4	0	0	0	0	0	0	12	4
Viet Nam	3	3	29	20	61	19	0	0	8	5	6	5	3	3	110	55
Total	4	4	46	32	98	43	115	79	88	59	44	33	26	7	421	257